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D-80298 Munich  
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Authorized Officer: Huber, O  
Our ref: 50193/SKU/PKK

**REPLY TO WRITTEN OPINION**  
**INTERNATIONAL PATENT APPLICATION PCT/FI00/00621**  
**APPLICANT: NOKIA NETWORKS OY**  
**Due Date: 29 September 2001**

In response to the Written Opinion we amend the claims (replacement pages 20-24) and respectfully present the following.

The independent claims 1, 15 and 18 (corresponding to original claims 1, 16 and 19) are amended to clarify how tandem free operation is extended over a packet network. Support for these amendments are found in the following parts of the description: page 7, rows 7-9 and 20-28; and page 8, rows 7-10. The original dependent claim 3 is merged to the amended independent claim 1, and the numbering of claims is changed accordingly. The wording of amended claims 9 and 11 is slightly changed from the original claims 10 and 12, but the rest of the claims are similar to the original claims.

Document D1 discloses a method, where audio data encoding/decoding is separately switched off in cellular network, if a second endpoint of a call is capable of GSM (or other cellular network) encoding/decoding (page 12, rows 13-17). Document D1 discloses specific switching means through which it is possible to pass coded audio data from a mobile station without applying audio encoding/decoding (page 12, row 35 – page 13, row 2). The specific switching means has determining means SSTDM for determining, whether the second endpoint of the call understands the coded audio data (page 18, rows 9-11 and 27-31). The determining is based on ITU H.245 control signals exchanged between the second endpoint of the call and a mobile station (or a cellular network element setting up the call for the mobile station) (page 20, rows 23-31).

Document D1 thus relates to situations, where a mobile station is involved in a call, whose second endpoint is a terminal reachable via a non-cellular network.

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A common coding/decoding for the mobile station and the terminal is negotiated between the terminal and a MSC, and thereafter coding/decoding in MSC is switched off.

Tandem free operation (TFO) is implemented in cellular network in the following way: two TFO-capable transcoder and rate adaptation units (TRAU) negotiate a codec for the call, and thereafter the TFO TRAU frames, which carry the encoded audio stream and TFO signalling, are transmitted as part of PCM signal towards mobile switching centers (MSC) and onwards.  
(description: page 2, rows 26-36)

The TRAU's involved in a call negotiate the codec using TFO inband signalling. The signalling is inband signalling: signalling is performed by modifying certain bits of the TRAU frame structure in TRAU before transmitting the TFO TRAU towards MSC. Typically in TFO operation, the encoded data is decoded in a TRAU to enable, for example, a handover to a non-TFO-capable TRAU. (description: page 3, rows 1-9)

If a TFO capable cellular network is connected to a packet network, it needs to be decided, what to do with the TFO TRAU frames and what to do with the decoded audio signal in the PCM signal.

The idea disclosed in D1 is to provide information about coding/decoding capabilities and to use GSM coding when the other endpoint understands it. If the endpoints do not have a common coding/decoding method, coded data is decoded and compressed. When this idea is applied in a situation, where packet network connects a TFO capable cellular network to a second network and where the endpoints of a call do not have a common coding/decoding method, the result is to compress a PCM data flow. This results in a loss of TFO inband signalling.

The idea disclosed in D1 is not able to support TFO operation due the following reason, either. D1 states that H.323 format is used for transmitting audio data (page 26, rows 33-35). The H.323 format does not allow transmission of TFO inband signalling as H.323 format has no place for carrying such information.

The claimed invention specifies transmission of TFO frames over packet data network not only when the endpoints of a call have a common coding/decoding method, but also when any entity on the opposite side of the packet data network is able to decode the coded data in TFO frames. Furthermore, the TFO frames may be either received from a cellular network or constructed at a gateway. Even when the endpoints of a call do not have a common coding/decoding method, it is possible to avoid a compressing/decompressing pair this way. TFO inband signalling is carried in the TFO frames over the packet network.

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The present invention thus does not necessarily affect the operation of cellular network; no modifications to the cellular network elements are required. Separate gateways connecting cellular networks to a packet network - and possible gateways mimicking a TFO-capable TRAU and connecting to the packet network a non-cellular network - are sufficient for carrying out the present invention.

Based on the above arguments, we conclude that the claimed invention is new and inventive. A reconsideration of the arguments relating to novelty and inventive step presented is therefore respectfully requested.

The description is brought into conformity with the amended claims. Replacement pages 6 and 6a are enclosed.

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Encl. Replacement pages 6, 6a, 20-24

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capabilities and tandem free operation capabilities on the first side of the packet network is transmitted from a first gateway, which connects the cellular network to the packet network, over the packet network to the second side of the packet network to a second gateway, which connects said entity to the packet network, for enabling on said second side of the packet network transmission of data frames to the packet network, when such data frames are either received from said entity or producible using at least information received from said entity, said data frames carrying coded data and signaling information relating to tandem free operation, and the coding of the coded data in the data frames corresponding to the decoding capabilities on the first side.

A decoding information exchange arrangement according to the invention is an arrangement for exchanging information over a packet network, which comprises

- means for establishing tandem free operation information about the tandem free operation capability on its side of the packet network and
- 15 - means for communicating data structures over the packet network, and it is characterized in that it comprises
- means for establishing decoding information about decoders on its side of the packet network,
- means for establishing a data structure that comprises said tandem free operation information and at least a certain part of said decoding information and
- 20 - means for receiving information about tandem free operation capability and decoding information on another side of the network for enabling to the packet network transmission of data frames, when such data frames are either received from its side of the packet network or producible using at least information received from its side of the packet network, said data frames carrying coded data and signaling information relating to tandem free operation, and the coding of the coded data in the data frames corresponding to the decoding capabilities on said another side.

A gateway according to the invention is a gateway for connecting a first network to a certain side of a second network, which second network is a packet network, which gateway comprises

- means for establishing tandem free operation information about the tandem free operation capability on said side of the packet network and
- means for communicating data structures over the packet network, and it is characterized in that it comprises

- means for establishing decoding information about decoders on said side of the packet network,
- means for establishing a data structure that comprises said tandem free operation information and at least a certain part of said decoding information and
- 5 - means for receiving information about tandem free operation capability and decoding information on another side of the network for enabling to the packet network transmission of data frames, when such data frames are either received from its side of the packet network or producible using at least information received from its side of the packet network, said data frames carrying coded data and
- 10 signaling information relating to tandem free operation, and the coding of the coded data in the data frames corresponding to the decoding capabilities on said another side.

A decoding information transmission arrangement according to the invention is characterized in that

- 15 - it comprises means for establishing decoding information about decoders in a cellular network and
- said means for establishing decoding information comprise means for transmitting at least a certain part of said decoding information outside the cellular network.

A cellular network element according to the invention is characterized in that

## Claims

1. A method (300, 400, 500) for transmitting information related to tandem free operation, where
  - a cellular network comprising a tandem free operation capable coding-decoding unit is connected to a packet network,
  - an entity, which can be a second network or a terminal, is connected to the packet network and
  - data is transmitted over the packet network between said coding-decoding unit on a first side of the packet network and said entity on a second side of the packet network, **characterized** in that
    - information about the decoding capabilities and tandem free operation capabilities on the first side of the packet network is transmitted (320, 420, 520) from a first gateway, which connects the cellular network to the packet network, over the packet network to the second side of the packet network to a second gateway, which connects said entity to the packet network, for enabling on said second side of the packet network transmission of data frames to the packet network, when such data frames are either received from said entity or producible using at least information received from said entity, said data frames carrying coded data and signaling information relating to tandem free operation, and the coding of the coded data in the data frames corresponding to the decoding capabilities on the first side.
2. A method according to claim 1, **characterized** in that information about the decoding capabilities and tandem free operation capabilities on the second side of the packet network is transmitted (321, 421, 521) to the first side of the packet network.
3. A method according to claim 1, **characterized** in that said first gateway comprises a media gateway and a media gateway controller, and said information is transmitted from the media gateway controller to the second gateway.
4. A method according to claim 1, **characterized** in that the tandem free operation capabilities and decoding capabilities on the first side of the packet network and the current decoding method that is used in the cellular network on said side of the packet network are transmitted (320) to the second side of the packet network.

5. A method according to claim 4, **characterized** in that information about the current decoding method is inferred (310, 311) from the tandem free operation frames that are comprised in the data flow that comes towards the packet network.
- 5 6. A method according to claim 5, **characterized** in that information about the current coding method that is used in a cellular network the first side of the packet network is inferred (310, 311) from the tandem free operation frames that are comprised in the data flow that comes towards the packet network
- 10 7. A method according to claim 4, **characterized** in that information about the decoding capabilities of the cellular network on the first side of the packet network is transmitted (420, 520) to the second side of the packet network.
8. A method according to claim 7, **characterized** in that information about the decoding capabilities of the cellular network on the first side of the packet network is established (410, 510) by transmitting said information from said cellular network.
- 15 9. A method according to claim 7, **characterized** in that said entity is a cellular network, and
- the coding and decoding capabilities of each cellular network is transmitted to the other cellular network and
  - the coding and decoding methods used in a certain connection are negotiated (540)
- 20 between the cellular networks when the connection is established.
10. A method according to claim 9, **characterized** in that instructions how to transmit the data flow coming from each cellular network are transmitted (550, 551) from the cellular networks towards the packet network.
- 25 11. A method according to claim 1, **characterized** in that the calls are transmitted over the packet network using a certain protocol defined for real time applications and information about the decoding capabilities and tandem free operation capabilities on the first side of the packet network are transmitted to the second side of the packet network using a certain control protocol for real time applications.
- 30 12. A method according to claim 11, **characterized** in that information about the decoding capabilities and tandem free operation capabilities is transmitted in RTCP messages.

13. A method according to claim 11, **characterized** in that information about the decoding capabilities and tandem free operation capabilities is transmitted in RTP messages.

5 14. A method according to claim 11, **characterized** in that information about the decoding capabilities and tandem free operation capabilities is transmitted in H.245 signaling messages.

15. A decoding information exchange arrangement (611) for exchanging information over a packet network, which comprises  
- means (614) for establishing tandem free operation information about the tandem  
10 free operation capability on its side of the packet network and  
- means (616) for communicating data structures over the packet network, **characterized** in that it further comprises  
- means (612) for establishing decoding information about decoders on its side of the packet network,  
15 - means (615) for establishing a data structure that comprises said tandem free operation information and at least a certain part of said decoding information and  
- means (617) for receiving information about tandem free operation capability and decoding information on another side of the network for enabling to the packet network transmission of data frames, when such data frames are either received  
20 from its side of the packet network or producible using at least information received from its side of the packet network, said data frames carrying coded data and signaling information relating to tandem free operation, and the coding of the coded data in the data frames corresponding to the decoding capabilities on said another side.

25 16. An arrangement according to claim 15, **characterized** in that  
- said means (612) for establishing decoding information comprise means (813) for establishing information about a decoder used in a certain connection over the packet network.

30 17. An arrangement according to claim 15, **characterized** in that it further comprises means (619) for receiving instructions about the processing of tandem free operation frames.

18. A gateway (610) for connecting a first network to a certain side of a second network, which second network is a packet network, which gateway comprises



- means (614) for establishing tandem free operation information about the tandem free operation capability on the said side of the second network and
  - means (616) for communicating data structures over the second network, **characterized** in that it further comprises
  - 5 - means (612) for establishing decoding information about decoders on said side of the second network,
  - means (615) for establishing a data structure that comprises said tandem free operation information and at least a certain part of said decoding information and
  - 10 - means (617) for receiving information about tandem free operation capability and decoding information on another side of the second network for enabling to the packet network transmission of data frames, when such data frames are either received from its side of the packet network or producible using at least information received from its side of the packet network, said data frames carrying coded data and signaling information relating to tandem free operation, and the coding of the
  - 15 coded data in the data frames corresponding to the decoding capabilities on said another side.
19. A decoding information transmission arrangement (601), **characterized** in that
- it comprises means (602) for establishing decoding information about decoders in a cellular network and
  - 20 - said means (602) for establishing decoding information comprise means for transmitting at least a certain part of said decoding information outside the cellular network.
20. An arrangement according to claim 19, **characterized** in that said means (602) for establishing decoding information comprise means (603) for establishing
- 25 information about a decoder used in a certain connection.
21. An arrangement according to claim 19, **characterized** in that
- said means (602) for establishing decoding information comprise means for establishing information about the coders and decoders available in the cellular network and
  - 30 - the arrangement further comprises means (604) for negotiating the coder and decoder used in a certain connection.
22. An arrangement according to claim 21, **characterized** in that it further comprises means (605) for instructing network elements outside the cellular network to process the data which is transmitted along the said connection.

23. A cellular network element (600), **characterized** in that

- it further comprises means (602) for establishing decoding information about decoders in a cellular network and

5 - said means (602) for establishing decoding information comprise means for transmitting at least a certain part of said decoding information outside the cellular network.

24. A cellular network element according to claim 23, **characterized** in that said means (602) for establishing decoding information comprise means (603) for  
10 establishing information about a decoder used in a certain connection over the packet network.

25. A cellular network element according to claim 23, **characterized** in that it further comprises means (604) for negotiating the coder and decoder used in a certain connection with another cellular network.

26. A cellular network element according to claim 25, **characterized** in that it  
15 further comprises means (605) for instructing network elements outside the cellular network to process the data which is transmitted along the said connection.

27. A cellular network element according to claim 25, **characterized** in that it is a network element of an UMTS network.

## PATENT COOPERATION TREATY

PCT

## NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Commissioner  
 US Department of Commerce  
 United States Patent and Trademark  
 Office, PCT  
 2011 South Clark Place Room  
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 Arlington, VA 22202  
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 in its capacity as elected Office

<b>Date of mailing (day/month/year)</b> 04 April 2001 (04.04.01)	<b>Applicant's or agent's file reference</b> 50193
<b>International application No.</b> PCT/FI00/00621	<b>Priority date (day/month/year)</b> 09 July 1999 (09.07.99)
<b>International filing date (day/month/year)</b> 06 July 2000 (06.07.00)	
<b>Applicant</b> KOISTINEN, Tommi	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:  
 06 February 2001 (06.02.01)

☐ in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was

☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer Nestor Santesso Telephone No.: (41-22) 338.83.38
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# PATENT COOPERATION TREATY

## PCT

### NOTIFICATION OF THE RECORDING OF A CHANGE

(PCT Rule 92bis.1 and  
Administrative Instructions, Section 422)

From the INTERNATIONAL BUREAU

To:

BERGGREN OY AB  
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<b>Date of mailing (day/month/year)</b> 10 January 2002 (10.01.02)	
<b>Applicant's or agent's file reference</b> 50193	<b>IMPORTANT NOTIFICATION</b>
<b>International application No.</b> PCT/FI00/00621	<b>International filing date (day/month/year)</b> 06 July 2000 (06.07.00)

<b>1. The following indications appeared on record concerning:</b> <input checked="" type="checkbox"/> the applicant <input type="checkbox"/> the inventor <input type="checkbox"/> the agent <input type="checkbox"/> the common representative		
<b>Name and Address</b> NOKIA NETWORKS OY P.O. Box 300 FIN-00045 Nokia Group Finland	<b>State of Nationality</b> FI	<b>State of Residence</b> FI
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	<b>Facsimile No.</b>	
	<b>Teleprinter No.</b>	
<b>2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:</b> <input type="checkbox"/> the person <input checked="" type="checkbox"/> the name <input checked="" type="checkbox"/> the address <input type="checkbox"/> the nationality <input type="checkbox"/> the residence		
<b>Name and Address</b> NOKIA CORPORATION Keilalahdentie 4 FIN-02150 Espoo Finland	<b>State of Nationality</b> FI	<b>State of Residence</b> FI
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<b>3. Further observations, if necessary:</b>		
<b>4. A copy of this notification has been sent to:</b> <div style="display: flex; justify-content: space-between;"> <div> <input checked="" type="checkbox"/> the receiving Office  <input type="checkbox"/> the International Searching Authority  <input type="checkbox"/> the International Preliminary Examining Authority         </div> <div> <input type="checkbox"/> the designated Offices concerned  <input checked="" type="checkbox"/> the elected Offices concerned  <input type="checkbox"/> other:         </div> </div>		

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**PCT REQUEST**

50193

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<b>0</b>	<b>For receiving Office use only</b>	
<b>0-1</b>	International Application No.	
<b>0-2</b>	International Filing Date	
<b>0-3</b>	Name of receiving Office and "PCT International Application"	
<b>0-4</b>	<b>Form - PCT/RO/101 PCT Request</b>	
<b>0-4-1</b>	Prepared using	<b>PCT-EASY Version 2.90</b> <b>(updated 10.05.2000)</b>
<b>0-5</b>	<b>Petition</b> The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty	
<b>0-6</b>	Receiving Office (specified by the applicant)	<b>National Board of Patents and Registration (Finland) (RO/FI)</b>
<b>0-7</b>	Applicant's or agent's file reference	<b>50193</b>
<b>I</b>	<b>Title of invention</b>	<b>METHOD FOR TRANSMITTING CODING INFORMATION OVER PACKET DATA NETWORK</b>
<b>II</b>	<b>Applicant</b>	
<b>II-1</b>	This person is:	<b>applicant only</b>
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<b>III-1-2</b>	Applicant for	<b>US only</b>
<b>III-1-4</b>	Name (LAST, First)	<b>KOISTINEN, Tommi</b>
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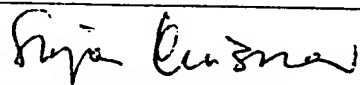
IV-1	<b>Agent or common representative; or address for correspondence</b> The person identified below is hereby/has been appointed to act on behalf of the applicant(s) before the competent International Authorities as:	<b>agent</b>
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IV-1-5	e-mail	email.box@berggren.fi
V	<b>Designation of States</b>	
V-1	<b>Regional Patent</b> (other kinds of protection or treatment, if any, are specified between parentheses after the designation(s) concerned)	<p>AP: GH GM KE LS MW MZ SD SL SZ TZ UG ZW and any other State which is a Contracting State of the Harare Protocol and of the PCT</p> <p>EA: AM AZ BY KG KZ MD RU TJ TM and any other State which is a Contracting State of the Eurasian Patent Convention and of the PCT</p> <p>EP: AT BE CH&amp;LI CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE and any other State which is a Contracting State of the European Patent Convention and of the PCT</p> <p>OA: BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG and any other State which is a member State of OAPI and a Contracting State of the PCT</p>
V-2	<b>National Patent</b> (other kinds of protection or treatment, if any, are specified between parentheses after the designation(s) concerned)	<p>AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH&amp;LI CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW</p>

## PCT REQUEST

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V-5	<b>Precautionary Designation Statement</b> In addition to the designations made under items V-1, V-2 and V-3, the applicant also makes under Rule 4.9(b) all designations which would be permitted under the PCT except any designation(s) of the State(s) indicated under item V-6 below. The applicant declares that those additional designations are subject to confirmation and that any designation which is not confirmed before the expiration of 15 months from the priority date is to be regarded as withdrawn by the applicant at the expiration of that time limit.		
V-6	<b>Exclusion(s) from precautionary designations</b>	NONE	
VI-1	<b>Priority claim of earlier national application</b>		
VI-1-1	Filing date	09 July 1999 (09.07.1999)	
VI-1-2	Number	991583	
VI-1-3	Country	FI	
VI-2	<b>Priority document request</b> The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) identified above as item(s):	VI-1	
VII-1	<b>International Searching Authority Chosen</b>	European Patent Office (EPO) (ISA/EP)	
VIII	<b>Check list</b>	number of sheets	electronic file(s) attached
VIII-1	Request	4	-
VIII-2	Description	19	-
VIII-3	Claims	5	-
VIII-4	Abstract	1	50193.txt
VIII-5	Drawings	4	-
VIII-7	TOTAL	33	
VIII-8	<b>Accompanying items</b>	paper document(s) attached	electronic file(s) attached
VIII-8	Fee calculation sheet	✓	-
VIII-10	Copy of general power of attorney	✓	-
VIII-16	PCT-EASY diskette	-	diskette
VIII-18	<b>Figure of the drawings which should accompany the abstract</b>	3	
VIII-19	<b>Language of filing of the international application</b>	English	
IX-1	<b>Signature of applicant or agent</b>		
IX-1-1	Name	BERGGREN OY AB	
IX-1-2	Name of signatory	Sirpa Kuisma	
IX-1-3	Capacity	Patent Attorney	

## PCT REQUEST

50193

Original (for SUBMISSION) - printed on 06.07.2000 11:43:49 AM

## FOR RECEIVING OFFICE USE ONLY

10-1	Date of actual receipt of the purported international application	
10-2	Drawings:	
10-2-1	Received	
10-2-2	Not received	
10-3	Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application	
10-4	Date of timely receipt of the required corrections under PCT Article 11(2)	
10-5	International Searching Authority	ISA/EP
10-6	Transmittal of search copy delayed until search fee is paid	

## FOR INTERNATIONAL BUREAU USE ONLY

11-1	Date of receipt of the record copy by the International Bureau	
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**PCT (ANNEX - FEE CALCULATION SHEET)**

50193

Original (for **SUBMISSION**) - printed on 06.07.2000 11:43:49 AM

(This sheet is not part of and does not count as a sheet of the international application)

<b>0</b>	<b>For receiving Office use only</b>		
<b>0-1</b>	International Application No.		
<b>0-2</b>	Date stamp of the receiving Office		
<b>0-4</b>	<b>Form - PCT/RO/101 (Annex)</b>		
<b>0-4-1</b>	PCT Fee Calculation Sheet Prepared using	<b>PCT-EASY Version 2.90 (updated 10.05.2000)</b>	
<b>0-9</b>	Applicant's or agent's file reference	<b>50193</b>	
<b>2</b>	Applicant	<b>NOKIA NETWORKS OY, et al.</b>	
<b>12</b>	<b>Calculation of prescribed fees</b>	fee amount/multiplier	total amounts (FIM)
<b>12-1</b>	Transmittal fee <b>T</b>	⇒	<b>800</b>
<b>12-2</b>	Search fee <b>S</b>	⇒	<b>5 618,71</b>
<b>12-3</b>	International fee Basic fee (first 30 sheets) <b>b1</b>	<b>2 431,8</b>	
<b>12-4</b>	Remaining sheets	<b>3</b>	
<b>12-5</b>	Additional amount <b>(X)</b>	<b>53,51</b>	
<b>12-6</b>	Total additional amount <b>b2</b>	<b>160,53</b>	
<b>12-7</b>	<b>b1 + b2 = B</b>	<b>2 592,33</b>	
<b>12-8</b>	Designation fees Number of designations contained in international application	<b>87</b>	
<b>12-9</b>	Number of designation fees payable (maximum 8)	<b>8</b>	
<b>12-10</b>	Amount of designation fee <b>(X)</b>	<b>523,22</b>	
<b>12-11</b>	Total designation fees <b>D</b>	<b>4 185,76</b>	
<b>12-12</b>	PCT-EASY fee reduction <b>R</b>	<b>-749,16</b>	
<b>12-13</b>	Total International fee (B+D-R) <b>I</b>	⇒	<b>6 028,93</b>
<b>12-14</b>	Fee for priority document Number of priority documents requested	<b>1</b>	
<b>12-15</b>	Fee per document <b>(X)</b>	<b>422</b>	
<b>12-16</b>	Total priority document fee <b>P</b>	⇒	<b>422</b>
<b>12-17</b>	<b>TOTAL FEES PAYABLE (T+S+I+P)</b>	⇒	<b>12 869,64</b>
<b>12-19</b>	Mode of payment	<b>cheque</b>	

**VALIDATION LOG AND REMARKS**

<b>13-2-6</b>	Validation messages Contents	<b>Green?</b> <b>Reference number for attached copy of general power of attorney not indicated.</b>
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# PATENT COOPERATION TREATY

From the  
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

## PCT

### NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL PRELIMINARY EXAMINATION REPORT (PCT Rule 71.1)

To:

BERGGREN OY AB  
P.O.Box 16  
00101 Helsinki  
FINLANDE

*SKU/pmm*

Date of mailing  
(day/month/year) 19.10.2001

Applicant's or agent's file reference  
50193/SKU/PKK

#### IMPORTANT NOTIFICATION

International application No.  
PCT/FI00/00621

International filing date (day/month/year)  
06/07/2000

Priority date (day/month/year)  
09/07/1999

Applicant  
NOKIA NETWORKS OY et al.

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

#### 4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/

 European Patent Office  
D-80298 Munich  
Tel. +49 89 2399 - 0 Tx: 523656 epmu d  
Fax: +49 89 2399 - 4465

Authorized officer

Barrio Baranano, A

Tel. +49 89 2399-8621



## PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 50193/SKU/PKK	<b>FOR FURTHER ACTION</b>	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/FI00/00621	International filing date (day/month/year) 06/07/2000	Priority date (day/month/year) 09/07/1999
International Patent Classification (IPC) or national classification and IPC H04L29/00		
Applicant NOKIA NETWORKS OY et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.



2. This REPORT consists of a total of 7 sheets, including this cover sheet.

- ☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 7 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☒ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☒ Certain observations on the international application

Date of submission of the demand  06/02/2001	Date of completion of this report  19.10.2001
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer  Huber, O  Telephone No. +49 89 2399 8967 

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/FI00/00621

## I. Basis of the report.

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

### Description, pages:

1-5,7-19	as originally filed		
6,6a	as received on	01/10/2001	with letter of 01/10/2001

### Claims, No.:

28	as originally filed		
1-27	as received on	01/10/2001	with letter of 01/10/2001

### Drawings, sheets:

1/4-4/4	as originally filed
---------	---------------------

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/FI00/00621

4. The amendments have resulted in the cancellation of:

- ☐ the description,      pages:
- ☐ the claims,      Nos.:
- ☐ the drawings,      sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability**

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

- ☐ the entire international application.
- ☒ claims Nos. 19-27.

because:

- ☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (*specify*):
- ☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. are so unclear that no meaningful opinion could be formed (*specify*):
- ☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.
- ☐ no international search report has been established for the said claims Nos. .

2. A meaningful international preliminary examination cannot be carried out due to the failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions:

- ☐ the written form has not been furnished or does not comply with the standard.
- ☐ the computer readable form has not been furnished or does not comply with the standard.

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;**

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/FI00/00621

**citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Yes:	Claims	1-18
	No:	Claims	
Inventive step (IS)	Yes:	Claims	1-18
	No:	Claims	
Industrial applicability (IA)	Yes:	Claims	1-18
	No:	Claims	

**2. Citations and explanations  
see separate sheet**

**VII. Certain defects in the international application**

The following defects in the form or contents of the international application have been noted:  
**see separate sheet**

**VIII. Certain observations on the international application**

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:  
**see separate sheet**

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

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International application No. PCT/FI00/00621

**Re Item III**

**Non-establishment of opinion with regard to novelty, inventive step and industrial applicability**

Independent Claims 19 and 23 are not clear because they extend the scope of the invention as claimed in Claims 1, 15 and 18 beyond the disclosure of the description. The novel and inventive features as discussed in Item V are not part of Claims 19 and 23, therefore the relationship between Claims 19 and 23 and the context of the invention is not clear (Article 6 PCT).

**Re Item V**

**Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1) Closest Prior Art and its Problem**

As defined in detail in the preamble of Claim 1, the invention relates to a method for transmitting information related to tandem free operation, including a cellular network with coding-decoding unit operating tandem free connected to a packet network and a second entity on the other side of the packet network.

This preamble is based on the disclosure of the closest prior art document D1 = WO99/31911.

The switching means described in D1 is used for switching off audio data encoding/decoding in a cellular network, if a second endpoint of a call is capable of GSM encoding/decoding. It is possible to pass coded audio data from a mobile station without applying audio encoding/decoding. The switching means determines whether the second endpoint of a call understands the coded audio data. D1 relates to situations where a mobile station is involved in a call and whose second endpoint is a terminal reachable via a non cellular network. The idea of D1 is to provide information about coding/decoding capabilities and to use GSM coding when the other endpoint understands it.

**2) Object of the Invention**

The object of the present invention is to provide a method for transmission of tandem free operation not only when the endpoints of a call have a common coding/decoding scheme, but also when any entity on the opposite side of the packet data network is able to decode the coded data in tandem free operation frames.

**3) Solution**

The solution is characterised in that information about the decoding capabilities and tandem free operation are sent from a first gateway which connects to the cellular network to the packet network, over the packet network to the second side of the packet network to a second gateway. By the above-constitution of the present invention, the operation of the cellular network is advantageously not affected.

**4) Conclusion and General Remarks**

The solution to this problem proposed in Claim 1 of the present application is considered as involving an inventive step (Article 33(3) PCT) for the following reasons:

The concept of the transmission method, according to Claim 1, the correspondent decoding exchange arrangement (Claim 15) which could be implemented in a gateway or cellular network, and the correspondent gateway (Claim 18) are not disclosed in or rendered obvious by the other documents cited in the International Search Report.

Claims 1-14 and 16-17 are dependent on Claims 1 and 15 and as such also meet the requirements of the PCT with respect to novelty and inventive step.

In D2 = US 5 768 308 a system for TDMA mobile to mobile codec bypass is disclosed. In the case that 2 mobiles are communicating together via a public switched network and are operating in digital mode the speech encoding can be switched off.

Claims 1-18 are novel, inventive and industrially applicable.



**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

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International application No. PCT/FI00/00621

**Re Item VII**

Certain defects in the international application

1. Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the document **D1** is not mentioned in the description, nor is this document identified therein.
2. The description should be in conformity with the claims as required by Rule 5.1(a)(iii) PCT. In particular the objective technical problem of the state of the art D1, solved by the characterizing part of the application, should be pointed out.

**Re Item VIII**

Certain observations on the international application

It is clear from the description on page 5, lines 23-25 that the following feature is essential to the definition of the invention:

(1) "The object of the invention is achieved by exchanging over the packet network information about decoders and tandem free operation capabilities supported on each side of the packet network."

Since independent claims 19 and 23 do not contain this feature it does not meet the requirement following from Article 6 PCT taken in combination with Rule 6.3(b) PCT that any independent claim must contain all the technical features essential to the definition of the invention.

Moreover, claims 19 and 23 also need this feature and others like the the first and second gateway to be corresponding to independent claims 1, 16 and 19.

capabilities and tandem free operation capabilities on the first side of the packet network is transmitted over the packet network to the second side of the packet network.

- 5 An decoding information exchange arrangement according to the invention is an arrangement for exchanging information over a packet network, which comprises
- means for establishing tandem free operation information about the tandem free operation capability on its side of the packet network and
  - means for communicating data structures over the packet network, and it is characterized in that it comprises
- 10 - means for establishing decoding information about decoders on its side of the packet network,
- means for establishing a data structure that comprises said tandem free operation information and at least a certain part of said decoding information and
  - means for receiving information about tandem free operation capability and
- 15 decoding information on another side of the network.

- A gateway according to the invention is a gateway for connecting a first network to a certain side of a second network, which second network is a packet network, which gateway comprises
- means for establishing tandem free operation information about the tandem free
- 20 operation capability on said side of the packet network and
- means for communicating data structures over the packet network, and it is characterized in that it comprises
  - means for establishing decoding information about decoders on said side of the packet network,
- 25 - means for establishing a data structure that comprises said tandem free operation information and at least a certain part of said decoding information and
- means for receiving information about tandem free operation capability and decoding information on another side of the network.

- A decoding information transmission arrangement according to the invention is
- 30 characterized in that
- it comprises means for establishing decoding information about decoders in a cellular network and
  - said means for establishing decoding information comprise means for transmitting at least a certain part of said decoding information outside the cellular network.

- 35 A cellular network element according to the invention is characterized in that

## Claims

1. A method (300, 400, 500) for transmitting information related to tandem free operation, where
  - a cellular network comprising a tandem free operation capable coding-decoding unit is connected to a packet network,
  - an entity, which can be a second network or a terminal, is connected to the packet network and
  - data is transmitted over the packet network between said coding-decoding unit on a first side of the packet network and said entity on a second side of the packet network, characterized in that information about the decoding capabilities and tandem free operation capabilities on the first side of the packet network is transmitted (320, 420, 520) over the packet network to the second side of the packet network.
2. A method according to claim 1, characterized in that information about the decoding capabilities and tandem free operation capabilities on the second side of the packet network is transmitted (321, 421, 521) to the first side of the packet network.
3. A method according to claim 1, where the cellular network is connected to the packet network with a first gateway and said entity is connected to the packet network with a second gateway, characterized in that said information is transmitted from the first gateway to the second gateway.
4. A method according to claim 3, characterized in that said first gateway comprises a media gateway and a media gateway controller, and said information is transmitted from the media gateway controller to the second gateway.
5. A method according to claim 1, characterized in that the tandem free operation capabilities and decoding capabilities on the first side of the packet network and the current decoding method that is used in the cellular network on said side of the packet network are transmitted (320) to the second side of the packet network.
6. A method according to claim 5, characterized in that information about the current decoding method is inferred (310, 311) from the tandem free operation frames that are comprised in the data flow that comes towards the packet network.
7. A method according to claim 6, characterized in that information about the current coding method that is used in a cellular network the first side of the packet

network is inferred (310, 311) from the tandem free operation frames that are comprised in the data flow that comes towards the packet network

8. A method according to claim 5, characterized in that information about the decoding capabilities of the cellular network on the first side of the packet network  
5 is transmitted (420, 520) to the second side of the packet network.

9. A method according to claim 8, characterized in that information about the decoding capabilities of the cellular network on the first side of the packet network is established (410, 510) by transmitting said information from said cellular network.

10 10. A method according to claim 8, where said entity is a cellular network, characterized in that  
- the coding and decoding capabilities of each cellular network is transmitted to the other cellular network and  
- the coding and decoding methods used in a certain connection are negotiated (540)  
15 between the cellular networks when the connection is established.

11. A method according to claim 10, characterized in that instructions how to transmit the data flow coming from each cellular network are transmitted (550, 551) from the cellular networks towards the packet network.

12. A method according to claim 1, where the calls are transmitted over the packet  
20 network using a certain protocol defined for real time applications, characterized in that information about the decoding capabilities and tandem free operation capabilities on the first side of the packet network are transmitted to the second side of the packet network using a certain control protocol for real time applications.

13. A method according to claim 12, characterized in that information about the  
25 decoding capabilities and tandem free operation capabilities is transmitted in RTCP messages.

14. A method according to claim 12, characterized in that information about the decoding capabilities and tandem free operation capabilities is transmitted in RTP messages.

30 15. A method according to claim 12, characterized in that information about the decoding capabilities and tandem free operation capabilities is transmitted in H.245 signaling messages.

16. A decoding information exchange arrangement (611) for exchanging information over a packet network, which comprises

- means (614) for establishing tandem free operation information about the tandem free operation capability on its side of the packet network and

5 - means (616) for communicating data structures over the packet network, characterized in that it further comprises

- means (612) for establishing decoding information about decoders on its side of the packet network,

10 - means (615) for establishing a data structure that comprises said tandem free operation information and at least a certain part of said decoding information and

- means (617) for receiving information about tandem free operation capability and decoding information on another side of the network.

17. An arrangement according to claim 16, characterized in that

- said means (612) for establishing decoding information comprise means (813) for

15 establishing information about a decoder used in a certain connection over the packet network.

18. An arrangement according to claim 16, characterized in that it further comprises means (619) for receiving instructions about the processing of tandem free operation frames.

20 19. A gateway (610) for connecting a first network to a certain side of a second network, which second network is a packet network, which gateway comprises

- means (614) for establishing tandem free operation information about the tandem free operation capability on the said side of the second network and

25 - means (616) for communicating data structures over the second network, characterized in that it further comprises

- means (612) for establishing decoding information about decoders on said side of the second network,

- means (615) for establishing a data structure that comprises said tandem free operation information and at least a certain part of said decoding information and

30 - means (617) for receiving information about tandem free operation capability and decoding information on another side of the second network.

20. A decoding information transmission arrangement (601), characterized in that

- it comprises means (602) for establishing decoding information about decoders in a cellular network and

- said means (602) for establishing decoding information comprise means for transmitting at least a certain part of said decoding information outside the cellular network.

21. An arrangement according to claim 20, characterized in that said means (602) for establishing decoding information comprise means (603) for establishing information about a decoder used in a certain connection.

22. An arrangement according to claim 20, characterized in that  
- said means (602) for establishing decoding information comprise means for establishing information about the coders and decoders available in the cellular network and  
- the arrangement further comprises means (604) for negotiating the coder and decoder used in a certain connection.

23. An arrangement according to claim 22, characterized in that it further comprises means (605) for instructing network elements outside the cellular network to process the data which is transmitted along the said connection.

24. A cellular network element (600), characterized in that  
- it further comprises means (602) for establishing decoding information about decoders in a cellular network and  
- said means (602) for establishing decoding information comprise means for transmitting at least a certain part of said decoding information outside the cellular network.

25. A cellular network element according to claim 24, characterized in that said means (602) for establishing decoding information comprise means (603) for establishing information about a decoder used in a certain connection over the packet network.

26. A cellular network element according to claim 24, characterized in that it further comprises means (604) for negotiating the coder and decoder used in a certain connection with another cellular network.

27. A cellular network element according to claim 26, characterized in that it further comprises means (605) for instructing network elements outside the cellular network to process the data which is transmitted along the said connection.

28. A cellular network element according to claim 26, characterized in that it is a network element of an UMTS network.

# PATENT COOPERATION TREATY

*Fax 1* 358-9693-3944

From the:  
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:

BERGGREN OY AB  
P.O.Box 16  
00101 Helsinki  
FINLANDE

*SKU/PKK*

*Berggren Oy Ab*

**PCT**

21-08-2001

*- 7 pages -*

WRITTEN OPINION  
**Confirmation**  
(PCT Rule 66)  
**FAX-Bestätigung**

Date of mailing (day/month/year)	14.08.2001
-------------------------------------	------------

Applicant's or agent's file reference

50193/SKU/PKK

**REPLY DUE**

**within 1 month(s) and 15 days**  
from the above date of mailing

International application No.

PCT/FI00/00621

International filing date (day/month/year)

06/07/2000

Priority date (day/month/year)

09/07/1999

International Patent Classification (IPC) or both national classification and IPC

H04L29/00

Applicant

NOKIA NETWORKS OY et al.

1. This written opinion is the first drawn up by this International Preliminary Examining Authority.

2. This opinion contains indications relating to the following items:

- I ☒ Basis of the opinion
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain document cited
- VII ☒ Certain defects in the international application
- VIII ☒ Certain observations on the international application

3. The applicant is hereby invited to reply to this opinion.

**When?** See the time limit indicated above. The applicant may, before the expiration of that time limit, request this Authority to grant an extension, see Rule 66.2(d).

**How?** By submitting a written reply, accompanied, where appropriate, by amendments, according to Rule 66.3. For the form and the language of the amendments, see Rules 66.8 and 66.9.

**Also:** For an additional opportunity to submit amendments, see Rule 66.4.  
For the examiner's obligation to consider amendments and/or arguments, see Rule 66.4 bis.  
For an informal communication with the examiner, see Rule 66.6.

**If no reply is filed,** the international preliminary examination report will be established on the basis of this opinion.

4. The final date by which the international preliminary examination report must be established according to Rule 69.2 is: 09/11/2001.

Name and mailing address of the international preliminary examining authority:

 European Patent Office  
D-80298 Munich  
Tel. +49 89 2399 - 0 Tx: 523656 epmu d  
Fax: +49 89 2399 - 4465

Authorized officer / Examiner

Huber, O

Formalities officer (incl. extension of time limits)

Ahrens, R

Telephone No. +49 89 2399 8136





**I. Basis of the opinion**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed"*):

**Description, pages:**

1-19 as originally filed

**Claims, No.:**

1-28 as originally filed

**Drawings, sheets:**

1/4-4/4 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:

☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N) Claims 1,16,19,20,24

Inventive step (IS) Claims 2-15,17,18,21-23,25-28

Industrial applicability (IA) Claims

2. Citations and explanations  
see separate sheet

**VII. Certain defects in the international application**

The following defects in the form or contents of the international application have been noted:  
see separate sheet

**VIII. Certain observations on the international application**

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:  
see separate sheet

**Re Item V**

**Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Reference is made to the following documents:

**D1 = WO 99 31911 A (ERICSSON TELEFON AB L M) 24 June 1999 (1999-06-24)**

2. The subject-matter of **Claim 1** of the present application **cannot be considered as novel** (Article 33(2) PCT) for the following reason:

Document **D1**, which is considered to represent the most relevant state of the art, **discloses** (according to the wording of present claim) **all features of Claim 1**, a method for transmitting information (page 20, line 22: "transmitted") related to tandem free operation (page 14, line 35 - page 15, line 2), where

-a cellular network (page 20, line 17: "MSC") comprising a tandem free operation capable coding-decoding unit (page 20, lines 18-19: "direct access unit") is connected to a packet network (page 20, line 19: "IP-network"),

-an entity, which can be a second network or a terminal, is connected to the packet network (page 20, lines 19-20: "second subscriber station") and

-data is transmitted over the packet network between said coding-decoding unit on a first side of the packet network and said entity on a second side of the packet network (page 20, lines 20-22: "transmitted ..."),

characterized in that information about the decoding capabilities and tandem free operation capabilities on the first side of the packet network is transmitted over the packet network to the second side of the packet network (page 20, lines 23-31: "...check the capabilities of the receiving unit ... whether ...coding is supported ... supports an audio data compression/decompression").

Furthermore, it should be noted that even if novelty of Claim 1 could be argued, based on minor differences between the features of Claim 1 and those disclosed in D1, the subject-matter of Claim 1 would not involve an inventive step, Articles 33 (3) PCT, in view of the disclosure of D1, especially as this document discloses the same object and the same type of solution as claimed in Claim 1, i.e. avoiding several compression/decompressions (page 11, lines 16-30).

Although the term "tandem free operation" is not explicitly mentioned in D1, it is a well known feature, which is associated immediately with reducing unnecessary compressions/decompressions along a transmission path by a person skilled in the art. Document D1 implicitly discloses this feature by referring multiple times to the efficiency and higher quality of fewer coding/decodings (page 11, lines 5-30).

**Present Claim 1 is therefore not considered as novel.**

3. Independent **Claims 16, 19, 20 and 24** correspond for the category "apparatus" to the method claimed in **Claim 1**, stating the method steps as "means for ...". Therefore the same objections arise regarding novelty as for Claim 1 (see paragraph 2.).
4. Dependent **Claims 2-15, 17, 18, 21-23 and 25-28** seem not to provide any features which would contribute to an inventive step.

Therefore the subject-matter of **Claims 1, 6, 19, 20 and 24** is neither considered as novel, nor is the subject-matter of **Claims 2-15, 17, 18, 21-23 and 25-28** considered as inventive.

**Re Item VII**

**Certain defects in the international application**

1. The independent Claims are not in the two-part form in accordance with Rule 6.3(b) PCT, which in the present case would be appropriate, with those features known in combination from the prior art (document **D1**) being placed in a preamble (Rule 6.3(b)(i) PCT) and with the remaining features being included in a characterising part (Rule 6.3(b)(ii) PCT).

The independent Claims should therefore be redrafted accordingly. If, however, the applicant is of the opinion that the two-part form would be inappropriate, then reasons therefor should be provided in the letter of reply. In addition, the applicant should ensure that it is clear from the description which features of the subject-matter of the independent Claims are **known from document D1** (see the PCT Guidelines PCT/GL/3 III, 2.3a).

2. Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the document **D1** is not mentioned in the description, nor is this document identified therein.
3. The description should be in conformity with the claims as required by Rule 5.1(a)(iii) PCT. In particular the objective technical problem of the state of the art **D1**, solved by the characterizing part of the application, should be pointed out.

**Re Item VIII**

**Certain observations on the international application**

1. It is clear from the description on page 5, lines 23-25 that the following feature is essential to the definition of the invention:

- (1) "The object of the invention is achieved by exchanging over the packet network information about decoders and tandem free operation capabilities supported on each side of the packet network."

Since independent claims 20 and 24 do not contain this feature it does not meet the requirement following from Article 6 PCT taken in combination with Rule 6.3(b) PCT that any independent claim must contain all the technical features essential to the definition of the invention.

Moreover, claims 20 and 24 also need this feature to be corresponding to independent claims 1, 16 and 19

2. The applicant is requested to file amendments by way of replacement pages in the manner stipulated by Rule 66.8(a) PCT. In particular, fair copies of the amendments should be filed preferably in triplicate.

Moreover, the applicant's attention is drawn to the fact that, as a consequence of Rule 66.8(a) PCT the examiner is not permitted to carry out any amendments under the PCT procedure, however minor these may be.

**WRITTEN OPINION  
SEPARATE SHEET**

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International application No. PCT/FI00/00621

3. In order to facilitate the examination of the conformity of the amended application with the requirements of Article 34(2)(b) PCT, the applicant is requested to clearly identify the amendments carried out, no matter whether they concern amendments by addition, replacement or deletion, and to indicate the passages of the application as filed on which these amendments are based (see also Rule 66.8(a) PCT).

If the applicant regards it as appropriate these indications could be submitted in handwritten form on a copy of the relevant parts of the application as filed.

4. Any information the applicant may wish to submit concerning the subject-matter of the invention, for example further details of its advantages or of the problem it solves, and for which there is no basis in the application as filed, should be confined to the letter of reply rather than be incorporated into the application, Article 34(2)(b) PCT.

IPEA/EP

## DEMAND

**EM**

**DC-2**

The undersigned requests that the international application specified below be the subject of international preliminary examination according to the Patent Cooperation Treaty and hereby elects all eligible States (except where otherwise indicated) ☐

### Identification of IPEA

**Date of receipt of DEMAND**Box No.  IDENTIFICATION OF THE INTERNATIONAL APPLICATION

**Applicant's or agent's file reference**  
**50193/SKU/PKK**

International application No. 

International filing date (day/month/year)

(Earliest) Priority date (day/month/year)

PCT/FI00/00621

**6 July 2000 (06.07.00)**

**9 July 1999 (09.07.99)**

**Title of invention**

# Method for transmitting coding information over packet data network

**Box No. II APPLICANT(S)**

Name and address: (Family name followed by given name; for a legal entity, full official designation)  
The address must include postal code and name of country

Telephone No. 

**NOKIA NETWORKS OY**  
**P.O. Box 300, FIN-00045 NOKIA GROUP, Finland**

Facsimile No. 

Teleprinter No. 2

State (*that is, country*) of nationality:

## Finland

State (that is, country) of residence:

## Finland

Name and address: (Family name followed by given name; for a legal entity, full official designation) The address must include postal code and name of country.

KOISTINEN, Tommi  
Kyyhkysmäki 22 B 19, FIN-02600 ESPOO, Finland

State (that is, country) of nationality:

## Finland

State (that is, country) of residence:

## Finland

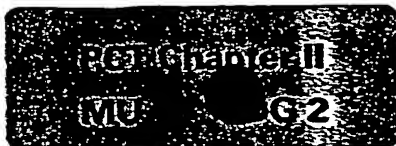
Name and address: (Family name followed by given name; for a legal entity, full official designation) The address must include postal code and name of country.

State (that is, country) of nationality:

State (that is, country) of residence:

1

Further applicants are indicated on a continuation sheet ☐

Sheet No. 2International application No.  
PCT/FI00/00621**Box No. III AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCE**The following person is ☒ agent ☐ common representativeand ☒ has been appointed earlier and represents the applicant(s) also for international preliminary examination☐ is hereby appointed and any earlier appointment of (an) agent(s)/common representative is hereby revoked☐ is hereby appointed, specifically for the procedure before the International Preliminary Examining Authority, in addition to the agent(s)/common representative appointed earlierName and address: *(Family name followed by given name; for a legal entity, full official designation)*  
*The address must include postal code and name of country*BERGGREN OY AB  
P.O. Box 16, FIN-00101 HELSINKI, Finland

Telephone No.

+358 9 693 701

Facsimile No.

+358 9 693 3944

Teleprinter No.

☐ Address for correspondence: Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent**Box No. IV BASIS FOR INTERNATIONAL PRELIMINARY EXAMINATION****Statement concerning amendments:\***1 ☐ The applicant wishes the international preliminary examination to start on the basis of:☒ the international application as originally filedthe description ☒ as originally filed☐ as amended under Article 34the claims ☒ as originally filed☐ as amended under Article 19 (together with any accompanying statement)☐ as amended under Article 34the drawings ☒ as originally filed☐ as amended under Article 342 ☐ The applicant wishes any amendment to the claims under Article 19 to be considered as reversed3 ☐ The applicant wishes the start of the international preliminary examination to be postponed until the expiration of 20 months from the priority date unless the International Preliminary Examining Authority receives a copy of any amendments made under Article 19 or a notice from the applicant that he does not wish to make such amendments (Rule 69(d)) ☐ (This check-box may be marked only where the time limit under Article 19 has not yet expired)

\* Where no check-box is marked, international preliminary examination will start on the basis of the international application as originally filed or, where a copy of amendments to the claims under Article 19 and/or amendments of the international application under Article 34 are received by the International Preliminary Examining Authority before it has begun to draw up a written opinion or the international preliminary examination report, as so amended

**Language for the purposes of international preliminary examination:** English☒ which is the language in which the international application was filed☒ which is the language of a translation furnished for the purposes of international search☒ which is the language of publication of the international application☐ which is the language of the translation (to be) furnished for the purposes of international preliminary examination**Box No. V ELECTION OF STATES**

The applicant hereby elects all eligible States (that is, all States which have been designated and which are bound by Chapter II of the PCT)

excluding the following States which the applicant wishes not to elect:



## Box No VI CHECK LIST

The demand is accompanied by the following elements, in the language referred to in Box No IV, for the purposes of international preliminary examination:

- |  |   |        |
|--|---|--------|
| 1 <input type="checkbox"/> translation of international application                              | : | sheets |
| 2 <input type="checkbox"/> amendments under Article 34   | : | sheets |
| 3 <input type="checkbox"/> copy (or, where required, translation) of amendments under Article 19 | : | sheets |
| 4 <input type="checkbox"/> copy (or, where required, translation) of statement under Article 19  | : | sheets |
| 5 <input type="checkbox"/> letter  | : | sheets |
| 6 <input type="checkbox"/> other ( <i>specify</i> )  | : | sheets |

For International Preliminary Examining Authority use only

received not received

<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

The demand is also accompanied by the item(s) marked below:

- |   |  |
|---|--|
| 1 <input checked="" type="checkbox"/> fee calculation sheet                             | 4 <input type="checkbox"/> statement explaining lack of signature                                  |
| 2 <input type="checkbox"/> separate signed power of attorney                            | 5 <input type="checkbox"/> nucleotide and or amino acid sequence listing in computer readable form |
| 3 <input type="checkbox"/> copy of general power of attorney; reference number, if any: | 6 <input type="checkbox"/> other ( <i>specify</i> ):   |

## Box No VII SIGNATURE OF APPLICANT, AGENT OR COMMON REPRESENTATIVE

Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the demand)

BERGGREN OY AB

*Sirpa Kuisma*

Sirpa Kuisma  
Patent Agent

HELSINKI, Finland, 6 February 2001

For International Preliminary Examining Authority use only

1 ☐ Date of actual receipt of DEMAND:

2 ☐ Adjusted date of receipt of demand due to CORRECTIONS under Rule 60(b):

3 ☐ The date of receipt of the demand is AFTER the expiration of 19 months from the priority date and item 4 or 5, below, does not apply

☐ The applicant has been informed accordingly

4 ☐ The date of receipt of the demand is WITHIN the period of 19 months from the priority date as extended by virtue of Rule 80

5 ☐ Although the date of receipt of the demand is after the expiration of 19 months from the priority date, the delay in arrival is EXCUSED pursuant to Rule 82

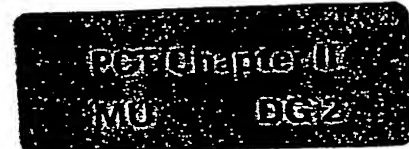
For International Bureau use only

Demand received from IPEA on:

# PCT

## FEE CALCULATION SHEET

Annex to the Demand for international preliminary examination



<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">International application No</td> <td style="width: 50%;">PCT/FI00/00621</td> </tr> <tr> <td>Applicant's or agent's file reference</td> <td>50193/SKU/PKK</td> </tr> </table>	International application No	PCT/FI00/00621	Applicant's or agent's file reference	50193/SKU/PKK	<div style="border: 1px solid black; padding: 5px; height: 100px;"> <p style="text-align: center;">For International Preliminary Examining Authority use only</p> <p style="text-align: center;">Date stamp of the IPEA</p> </div>				
International application No	PCT/FI00/00621								
Applicant's or agent's file reference	50193/SKU/PKK								
<p><b>Applicant</b></p> <p style="text-align: center; font-weight: bold;">NOKIA NETWORKS OY</p>									
<p><b>Calculation of prescribed fees</b></p> <div style="margin-top: 20px;"> <div style="display: flex; justify-content: space-between;"> <div> <p>1 <input type="checkbox"/> Preliminary examination fee</p> <p>2 <input type="checkbox"/> Handling fee <i>(Applicants from certain States are entitled to a reduction of 75% of the handling fee. Where the applicant is (or all applicants are) so entitled, the amount to be entered at H is 25% of the handling fee.)</i></p> <p>3 <input type="checkbox"/> Total of prescribed fees Add the amounts entered at P and H and enter total in the TOTAL box</p> </div> <div style="border: 1px solid black; padding: 5px; text-align: center; width: 30%;"> <p>EUR 1533</p> <p>EUR 147</p> <p>EUR 1680</p> <p>TOTAL</p> </div> <div style="border: 1px solid black; padding: 5px; text-align: center; width: 10%;"> <p>P</p> <p>H</p> </div> </div> </div>									
<p><b>Mode of Payment</b></p> <table style="width: 100%;"> <tr> <td><input checked="" type="checkbox"/> authorization to charge deposit account with the IPEA (see below)</td> <td><input type="checkbox"/> cash</td> </tr> <tr> <td><input type="checkbox"/> cheque</td> <td><input type="checkbox"/> revenue stamps</td> </tr> <tr> <td><input type="checkbox"/> postal money order</td> <td><input type="checkbox"/> coupons</td> </tr> <tr> <td><input type="checkbox"/> bank draft</td> <td><input type="checkbox"/> other (specify):</td> </tr> </table>		<input checked="" type="checkbox"/> authorization to charge deposit account with the IPEA (see below)	<input type="checkbox"/> cash	<input type="checkbox"/> cheque	<input type="checkbox"/> revenue stamps	<input type="checkbox"/> postal money order	<input type="checkbox"/> coupons	<input type="checkbox"/> bank draft	<input type="checkbox"/> other (specify):
<input checked="" type="checkbox"/> authorization to charge deposit account with the IPEA (see below)	<input type="checkbox"/> cash								
<input type="checkbox"/> cheque	<input type="checkbox"/> revenue stamps								
<input type="checkbox"/> postal money order	<input type="checkbox"/> coupons								
<input type="checkbox"/> bank draft	<input type="checkbox"/> other (specify):								
<p><b>Deposit Account Authorization</b> <i>(this mode of payment may not be available at all IPEAs)</i></p> <p>The IPEA/ EP <input checked="" type="checkbox"/> is hereby authorized to charge the total fees indicated above to my deposit account.</p> <p><input type="checkbox"/> <i>(this check-box may be marked only if the conditions for deposit accounts of the IPEA so permit)</i> is hereby authorized to charge any deficiency or credit any overpayment in the total fees indicated above to my deposit account.</p> <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div> <p>28150004</p> <p>Deposit Account Number</p> </div> <div> <p>6 February 2001</p> <p>Date (day/month/year)</p> </div> <div> <p>Berggren Oy Ab</p> <p><i>Pia Kulju</i></p> <p>Signature Pia Kulju, Patent Assistant</p> </div> </div>									

## PATENT COOPERATION TREATY

PCT

From the INTERNATIONAL BUREAU

NOTIFICATION OF THE RECORDING  
OF A CHANGE(PCT Rule 92bis.1 and  
Administrative Instructions, Section 422)

To:

BERGGREN OY AB  
P.O. Box 16  
FIN-00101 Helsinki  
FINLANDE*Berggren Oy Ab**skoln*

16-01-2002

Date of mailing (day/month/year)  
10 January 2002 (10.01.02)Applicant's or agent's file reference  
50193International application No.  
PCT/FI00/00621

## IMPORTANT NOTIFICATION

International filing date (day/month/year)  
06 July 2000 (06.07.00)

## 1. The following indications appeared on record concerning:

☒ the applicant ☐ the inventor ☐ the agent ☐ the common representative

## Name and Address

NOKIA NETWORKS OY  
P.O. Box 300  
FIN-00045 Nokia Group  
FinlandState of Nationality  
FIState of Residence  
FI

Telephone No.

Facsimile No.

Teleprinter No.

## 2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:

☐ the person ☒ the name ☒ the address ☐ the nationality ☐ the residence

## Name and Address

NOKIA CORPORATION  
Keilalahdentie 4  
FIN-02150 Espoo  
FinlandState of Nationality  
FIState of Residence  
FI

Telephone No.

Facsimile No.

Teleprinter No.

## 3. Further observations, if necessary:

## 4. A copy of this notification has been sent to:

☒ the receiving Office ☐ the designated Offices concerned  
☐ the International Searching Authority ☒ the elected Offices concerned  
☐ the International Preliminary Examining Authority ☐ other:The International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland

Facsimile No.: (41-22) 740.14.35

Authorized officer

François BAECHELER

Telephone No.: (41-22) 338.83.38

Form PCT/IB/306 (March 1994)

004583956

PCT

REC'D 23 OCT 2001



WIPO

PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

14

Applicant's or agent's file reference 50193/SKU/PKK	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/FI00/00621	International filing date (day/month/year) 06/07/2000	Priority date (day/month/year) 09/07/1999
International Patent Classification (IPC) or national classification and IPC H04L29/00		
Applicant NOKIA NETWORKS OY et al.		
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 7 sheets, including this cover sheet.</p> <p><input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of 7 sheets.</p>		
<p>3. This report contains indications relating to the following items:</p> <ul style="list-style-type: none"> <li>I <input checked="" type="checkbox"/> Basis of the report</li> <li>II <input type="checkbox"/> Priority</li> <li>III <input checked="" type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</li> <li>IV <input type="checkbox"/> Lack of unity of invention</li> <li>V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</li> <li>VI <input type="checkbox"/> Certain documents cited</li> <li>VII <input checked="" type="checkbox"/> Certain defects in the international application</li> <li>VIII <input checked="" type="checkbox"/> Certain observations on the international application</li> </ul>		
Date of submission of the demand  06/02/2001	Date of completion of this report  19.10.2001	
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer  Huber, O  Telephone No. +49 89 2399 8967 	

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/FI00/00621

**I. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17):*

**Description, pages:**

1-5,7-19	as originally filed		
6,6a	as received on	01/10/2001 with letter of	01/10/2001

**Claims, No.:**

28	as originally filed		
1-27	as received on	01/10/2001 with letter of	01/10/2001

**Drawings, sheets:**

1/4-4/4	as originally filed
---------	---------------------

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/FI00/00621

4. The amendments have resulted in the cancellation of:

- ☐ the description,            pages:
- ☐ the claims,                Nos.:
- ☐ the drawings,            sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability**

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

- ☐ the entire international application.
- ☒ claims Nos. 19-27.

because:

- ☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (*specify*):
- ☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. are so unclear that no meaningful opinion could be formed (*specify*):
- ☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.
- ☐ no international search report has been established for the said claims Nos. .

2. A meaningful international preliminary examination cannot be carried out due to the failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions:

- ☐ the written form has not been furnished or does not comply with the standard.
- ☐ the computer readable form has not been furnished or does not comply with the standard.

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;**

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/FI00/00621

## **citations and explanations supporting such statement**

### **1. Statement**

Novelty (N)	Yes: Claims 1-18
	No: Claims
Inventive step (IS)	Yes: Claims 1-18
	No: Claims
Industrial applicability (IA)	Yes: Claims 1-18
	No: Claims

### **2. Citations and explanations see separate sheet**

## **VII. Certain defects in the international application**

The following defects in the form or contents of the international application have been noted:  
**see separate sheet**

## **VIII. Certain observations on the international application**

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:  
**see separate sheet**

**Re Item III**

**Non-establishment of opinion with regard to novelty, inventive step and industrial applicability**

Independent Claims 19 and 23 are not clear because they extend the scope of the invention as claimed in Claims 1, 15 and 18 beyond the disclosure of the description. The novel and inventive features as discussed in Item V are not part of Claims 19 and 23, therefore the relationship between Claims 19 and 23 and the context of the invention is not clear (Article 6 PCT).

**Re Item V**

**Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1) Closest Prior Art and its Problem**

As defined in detail in the preamble of Claim 1, the invention relates to a method for transmitting information related to tandem free operation, including a cellular network with coding-decoding unit operating tandem free connected to a packet network and a second entity on the other side of the packet network.

This preamble is based on the disclosure of the closest prior art document D1 = WO99/31911.

The switching means described in D1 is used for switching off audio data encoding/decoding in a cellular network, if a second endpoint of a call is capable of GSM encoding/decoding. It is possible to pass coded audio data from a mobile station without applying audio encoding/decoding. The switching means determines whether the second endpoint of a call understands the coded audio data. D1 relates to situations where a mobile station is involved in a call and whose second endpoint is a terminal reachable via a non cellular network. The idea of D1 is to provide information about coding/decoding capabilities and to use GSM coding when the other endpoint understands it.

**2) Object of the Invention**



The object of the present invention is to provide a method for transmission of tandem free operation not only when the endpoints of a call have a common coding/decoding scheme, but also when any entity on the opposite side of the packet data network is able to decode the coded data in tandem free operation frames.

**3) Solution**

The solution is characterised in that information about the decoding capabilities and tandem free operation are sent from a first gateway which connects to the cellular network to the packet network, over the packet network to the second side of the packet network to a second gateway. By the above-constitution of the present invention, the operation of the cellular network is advantageously not affected.

**4) Conclusion and General Remarks**

The solution to this problem proposed in Claim 1 of the present application is considered as involving an inventive step (Article 33(3) PCT) for the following reasons:

The concept of the transmission method, according to Claim 1, the correspondent decoding exchange arrangement (Claim 15) which could be implemented in a gateway or cellular network, and the correspondent gateway (Claim 18) are not disclosed in or rendered obvious by the other documents cited in the International Search Report.

Claims 1-14 and 16-17 are dependent on Claims 1 and 15 and as such also meet the requirements of the PCT with respect to novelty and inventive step.

In D2 = US 5 768 308 a system for TDMA mobile to mobile codec bypass is disclosed. In the case that 2 mobiles are communicating together via a public switched network and are operating in digital mode the speech encoding can be switched off.

Claims 1-18 are novel, inventive and industrially applicable.

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

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International application No. PCT/FI00/00621

**Re Item VII**

Certain defects in the international application

1. Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the document **D1** is not mentioned in the description, nor is this document identified therein.
2. The description should be in conformity with the claims as required by Rule 5.1(a)(iii) PCT. In particular the objective technical problem of the state of the art **D1**, solved by the characterizing part of the application, should be pointed out.

**Re Item VIII**

Certain observations on the international application

It is clear from the description on page 5, lines 23-25 that the following feature is essential to the definition of the invention:

(1) "The object of the invention is achieved by exchanging over the packet network information about decoders and tandem free operation capabilities supported on each side of the packet network."

Since independent claims 19 and 23 do not contain this feature it does not meet the requirement following from Article 6 PCT taken in combination with Rule 6.3(b) PCT that any independent claim must contain all the technical features essential to the definition of the invention.

Moreover, claims 19 and 23 also need this feature and others like the the first and second gateway to be corresponding to independent claims 1, 16 and 19.

capabilities and tandem free operation capabilities on the first side of the packet network is transmitted from a first gateway, which connects the cellular network to the packet network, over the packet network to the second side of the packet network to a second gateway, which connects said entity to the packet network, for enabling on said second side of the packet network transmission of data frames to the packet network, when such data frames are either received from said entity or producible using at least information received from said entity, said data frames carrying coded data and signaling information relating to tandem free operation, and the coding of the coded data in the data frames corresponding to the decoding capabilities on the first side.

A decoding information exchange arrangement according to the invention is an arrangement for exchanging information over a packet network, which comprises

- means for establishing tandem free operation information about the tandem free operation capability on its side of the packet network and
- 15 - means for communicating data structures over the packet network, and it is characterized in that it comprises
- means for establishing decoding information about decoders on its side of the packet network,
- means for establishing a data structure that comprises said tandem free operation information and at least a certain part of said decoding information and
- 20 - means for receiving information about tandem free operation capability and decoding information on another side of the network for enabling to the packet network transmission of data frames, when such data frames are either received from its side of the packet network or producible using at least information received from its side of the packet network, said data frames carrying coded data and signaling information relating to tandem free operation, and the coding of the coded data in the data frames corresponding to the decoding capabilities on said another side.

A gateway according to the invention is a gateway for connecting a first network to a certain side of a second network, which second network is a packet network, which gateway comprises

- 30 - means for establishing tandem free operation information about the tandem free operation capability on said side of the packet network and
- means for communicating data structures over the packet network, and it is characterized in that it comprises
- 35

6a

- means for establishing decoding information about decoders on said side of the packet network,
- means for establishing a data structure that comprises said tandem free operation information and at least a certain part of said decoding information and
- 5 - means for receiving information about tandem free operation capability and decoding information on another side of the network for enabling to the packet network transmission of data frames, when such data frames are either received from its side of the packet network or producible using at least information received from its side of the packet network, said data frames carrying coded data and
- 10 signaling information relating to tandem free operation, and the coding of the coded data in the data frames corresponding to the decoding capabilities on said another side.

A decoding information transmission arrangement according to the invention is characterized in that

- 15 - it comprises means for establishing decoding information about decoders in a cellular network and
- said means for establishing decoding information comprise means for transmitting at least a certain part of said decoding information outside the cellular network.

A cellular network element according to the invention is characterized in that

**Claims**

1. A method (300, 400, 500) for transmitting information related to tandem free operation, where
  - a cellular network comprising a tandem free operation capable coding-decoding unit is connected to a packet network,
  - an entity, which can be a second network or a terminal, is connected to the packet network and
  - data is transmitted over the packet network between said coding-decoding unit on a first side of the packet network and said entity on a second side of the packet network, characterized in that
    - information about the decoding capabilities and tandem free operation capabilities on the first side of the packet network is transmitted (320, 420, 520) from a first gateway, which connects the cellular network to the packet network, over the packet network to the second side of the packet network to a second gateway, which connects said entity to the packet network, for enabling on said second side of the packet network transmission of data frames to the packet network, when such data frames are either received from said entity or producible using at least information received from said entity, said data frames carrying coded data and signaling information relating to tandem free operation, and the coding of the coded data in the data frames corresponding to the decoding capabilities on the first side.
2. A method according to claim 1, characterized in that information about the decoding capabilities and tandem free operation capabilities on the second side of the packet network is transmitted (321, 421, 521) to the first side of the packet network.
3. A method according to claim 1, characterized in that said first gateway comprises a media gateway and a media gateway controller, and said information is transmitted from the media gateway controller to the second gateway.
4. A method according to claim 1, characterized in that the tandem free operation capabilities and decoding capabilities on the first side of the packet network and the current decoding method that is used in the cellular network on said side of the packet network are transmitted (320) to the second side of the packet network.

5. A method according to claim 4, characterized in that information about the current decoding method is inferred (310, 311) from the tandem free operation frames that are comprised in the data flow that comes towards the packet network.
6. A method according to claim 5, characterized in that information about the current coding method that is used in a cellular network the first side of the packet network is inferred (310, 311) from the tandem free operation frames that are comprised in the data flow that comes towards the packet network
7. A method according to claim 4, characterized in that information about the decoding capabilities of the cellular network on the first side of the packet network is transmitted (420, 520) to the second side of the packet network.
8. A method according to claim 7, characterized in that information about the decoding capabilities of the cellular network on the first side of the packet network is established (410, 510) by transmitting said information from said cellular network.
9. A method according to claim 7, characterized in that said entity is a cellular network, and
- the coding and decoding capabilities of each cellular network is transmitted to the other cellular network and
  - the coding and decoding methods used in a certain connection are negotiated (540) between the cellular networks when the connection is established.
10. A method according to claim 9, characterized in that instructions how to transmit the data flow coming from each cellular network are transmitted (550, 551) from the cellular networks towards the packet network.
11. A method according to claim 1, characterized in that the calls are transmitted over the packet network using a certain protocol defined for real time applications and information about the decoding capabilities and tandem free operation capabilities on the first side of the packet network are transmitted to the second side of the packet network using a certain control protocol for real time applications.
12. A method according to claim 11, characterized in that information about the decoding capabilities and tandem free operation capabilities is transmitted in RTCP messages.

13. A method according to claim 11, **characterized** in that information about the decoding capabilities and tandem free operation capabilities is transmitted in RTP messages.

5 14. A method according to claim 11, **characterized** in that information about the decoding capabilities and tandem free operation capabilities is transmitted in H.245 signaling messages.

15. A decoding information exchange arrangement (611) for exchanging information over a packet network, which comprises  
- means (614) for establishing tandem free operation information about the tandem  
10 free operation capability on its side of the packet network and  
- means (616) for communicating data structures over the packet network, **characterized** in that it further comprises  
- means (612) for establishing decoding information about decoders on its side of the packet network,  
15 - means (615) for establishing a data structure that comprises said tandem free operation information and at least a certain part of said decoding information and  
- means (617) for receiving information about tandem free operation capability and decoding information on another side of the network for enabling to the packet network transmission of data frames, when such data frames are either received  
20 from its side of the packet network or producible using at least information received from its side of the packet network, said data frames carrying coded data and signaling information relating to tandem free operation, and the coding of the coded data in the data frames corresponding to the decoding capabilities on said another side.

25 16. An arrangement according to claim 15, **characterized** in that  
- said means (612) for establishing decoding information comprise means (813) for establishing information about a decoder used in a certain connection over the packet network.

30 17. An arrangement according to claim 15, **characterized** in that it further comprises means (619) for receiving instructions about the processing of tandem free operation frames.

18. A gateway (610) for connecting a first network to a certain side of a second network, which second network is a packet network, which gateway comprises

- means (614) for establishing tandem free operation information about the tandem free operation capability on the said side of the second network and
- means (616) for communicating data structures over the second network, characterized in that it further comprises
- 5 - means (612) for establishing decoding information about decoders on said side of the second network,
- means (615) for establishing a data structure that comprises said tandem free operation information and at least a certain part of said decoding information and
- means (617) for receiving information about tandem free operation capability and
- 10 decoding information on another side of the second network for enabling to the packet network transmission of data frames, when such data frames are either received from its side of the packet network or producible using at least information received from its side of the packet network, said data frames carrying coded data and signaling information relating to tandem free operation, and the coding of the
- 15 coded data in the data frames corresponding to the decoding capabilities on said another side.

19. A decoding information transmission arrangement (601), characterized in that
- it comprises means (602) for establishing decoding information about decoders in a cellular network and
  - 20 - said means (602) for establishing decoding information comprise means for transmitting at least a certain part of said decoding information outside the cellular network.

20. An arrangement according to claim 19, characterized in that said means (602) for establishing decoding information comprise means (603) for establishing
- 25 information about a decoder used in a certain connection.

21. An arrangement according to claim 19, characterized in that
- said means (602) for establishing decoding information comprise means for establishing information about the coders and decoders available in the cellular network and
  - 30 - the arrangement further comprises means (604) for negotiating the coder and decoder used in a certain connection.

22. An arrangement according to claim 21, characterized in that it further comprises means (605) for instructing network elements outside the cellular network to process the data which is transmitted along the said connection.



23. A cellular network element (600), **characterized in that**

- it further comprises means (602) for establishing decoding information about decoders in a cellular network and

5 - said means (602) for establishing decoding information comprise means for transmitting at least a certain part of said decoding information outside the cellular network.

24. A cellular network element according to claim 23, **characterized in that** said means (602) for establishing decoding information comprise means (603) for establishing information about a decoder used in a certain connection over the  
10 packet network.

25. A cellular network element according to claim 23, **characterized in that** it further comprises means (604) for negotiating the coder and decoder used in a certain connection with another cellular network.

26. A cellular network element according to claim 25, **characterized in that** it  
15 further comprises means (605) for instructing network elements outside the cellular network to process the data which is transmitted along the said connection.

27. A cellular network element according to claim 25, **characterized in that** it is a network element of an UMTS network.